CLAIMS

1. A method, comprising the steps of:

culturing a plurality of immortal pluripotent cells in the presence of a cell culture medium under conditions which promote growth;

allowing a portion of the cells to grow and differentiate into differentiated human blood cells; and

isolating the differentiated human blood cells from the culture.

2. The method of claim 1, wherein the immortal pluripotent cells are cultured under conditions which promote asymmetric division resulting in the production of a population of daughter pluripotent cells and transient amplifying cells.

3. The method of claim 1 or 2 wherein prior to differentiation at least a portion of a plurality of immortal pluripotent cells is aggregated.

4. The method of any one of claim 3 wherein the aggregation of at least a portion of a plurality of immortal pluripotent cells is achieved by gravity or centrifugation.

5. The method of any one of claims 1 to 4, wherein the culturing of the immortal pluripotent cells occurs in a first bioreactor, and wherein the transient amplifying cells are transferred to a second bioreactor and cultured under conditions that promote proliferation of the transient amplifying cells.

6. The method of claim 5 wherein the amplified transient amplifying cells from the second bioreactor are transferred to a third bioreactor and cultured under conditions that promote further differentiation of the transient amplifying cells.

7. The method of any one of claims 5 or 6, wherein the first bioreactor comprises a surface which binds differentially to a specific known cell type.

8. The method of any one of claims 1 to 7, further comprising:

formulating the isolated human blood cells in an injectable formulation.

9. The method of any one of claims 1 to 7, further comprising:

lysing the human blood cells; and

isolating a protein from the lysed cells.

10. The method of any one of claims 1 to 9, wherein the immortal pluripotent cells are self renewable over a period of at least three months, preferably at least six months or most preferably at least twelve months.

11. The method of any one of claims 1 to 10, wherein the immortal pluripotent cells are human embryonic stem cels.